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EXAMINER

NOGUEROLA, ALEXANDER STEPHAN

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 11/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,108

Applicant(s)

MARIELLA, RAYMOND P.

Examiner

ALEX NOGUEROLA

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) 1-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4, 8-13, and 16 is/are rejected.
- 7) ☒ Claim(s) 3,5-7,14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- ☐ Interview Summary (PTO-413) Paper No(s). _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Response to Arguments

1. Applicant's arguments filed September 15, 2003 have been fully considered but they are not persuasive. Applicant broadly alleges that the rejection of claims 1, 2, 4, 8-13, and 16 under 35 U.S.C. 103 (a) as being obvious over Pethig, Yatsunami, Ager, and Suehiro does not meet any of the three requirements for establishing a prima facie case of obviousness. The Examiner respectfully disagrees.

As for the first obviousness requirement, suggestion or motivation to combine references, it will be first noted that all of the references applied in the rejection are directed to dielectrophoresis. As stated in the rejection, Pethig differs from the invention of independent claims 1 and 12 only in the orientation of the first trap electrodes, namely in that these claims require the first trap electrodes to be generally parallel to the flow of target materials. Claim 8 also requires the first trap electrodes to be generally parallel to the flow of target materials and provides for second trap electrodes and third trap electrodes similarly oriented. It was known in the art at the time of the invention that how the electrodes are oriented, namely transverse or parallel to the flow of target materials, would affect the action of the dielectrophoresis field on the target materials. As stated in the rejection, a motivation for having the first trap electrodes be generally parallel to the flow of target materials is to optimize the trap:

‘For example, as taught by Ager et al. in a dielectrophoresis trap with transverse electrodes “ the particles are caused to migrate at different rates and those migrating faster are separated from those migrating more slowly or not at all” (page 3, lines 21-29) while in a trap having parallel electrodes the particles may be diverted in a direction transverse to the flow so that some of the particles may directed to one outlet instead of another outlet (page 4, line 25 – page 5, line 2). In a trap having electrodes both parallel

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and transverse to the flow of materials, as taught by Suehiro et al., the particles may be precisely positioned within the trap.' (the last paragraph on page 3, bridging to page 4, of the Office action of July 01, 2003)

As for the second obviousness requirement, reasonable expectation of success, Applicant has not stated why he believes success would have been unexpected. Contrary to Applicant's belief, one with ordinary skill in the art would have expected success because the secondary references applied in the rejection teach dielectrophoresis devices in which electrodes are orientated parallel to the flow of target materials:

'In the first trap of Pethig et al. the electrodes are arranged generally transverse, not parallel, to the flow of the target materials and the other materials. However, as seen from Yatsunami and Ager et al. dielectrophoresis separator apparatuses having a trap with electrodes arranged generally parallel to the flow of target materials and the other materials were known at the time. See in Yatsunami the abstract and Drawings 1 and 6 and in Ager et al. see the abstract and Figures 1-6. It should also be noted that Ager et al. also teach multiple traps (page 5, lines 4-15). Indeed, at the time of the invention it was known to have in a dielectrophoresis separator apparatus electrodes arranged generally transverse *and* generally parallel to the flow of the target materials and the other materials. See in Suehiro et al. the abstract and Figure 1.' (page 3 of the Office action of July 01, 2003)

As for the third obviousness requirement, the prior art references teaching or suggesting all the claim limitations, as stated above the secondary references clearly teach having electrodes be generally parallel to the flow of target materials. Indeed, as discussed in the rejection, it was known at the time of invention to have electrodes oriented parallel to the flow of target materials, transverse to the flow of target materials, or in combination electrodes transverse to the flow of target materials and electrodes parallel to the flow of target materials. Again, the orientation of the electrodes will depend on the desired effect on the target materials.

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In sum, Applicant only broadly alleges it would have been unobvious in having electrodes be generally parallel to the flow of target materials. Applicant does not, for example, set forth specific unexpected results or technical challenges to having the electrodes generally parallel to the flow of target materials. Thus, the rejection under 35 U.S.C 103(a) will be maintained.

Status of the Rejections applied and Subject Matter indicated allowable in the

Office Action of July 01, 2003

2. The rejection of claims 1, 2, 4, 8-13, and 16 under 35 U.S.C. 103 (a) as being obvious over Pethig, Yatsunami, Ager, and Suehiro is maintained.

3. Claims 3, 5-7, 14, and 15 are still only objected to.

Final Rejection

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX NOGUEROLA whose telephone number is (703) 305-5686. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NAM NGUYEN can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Alex Noguera
Alex Noguera
11/20/03
Primary Examiner
TC 1753